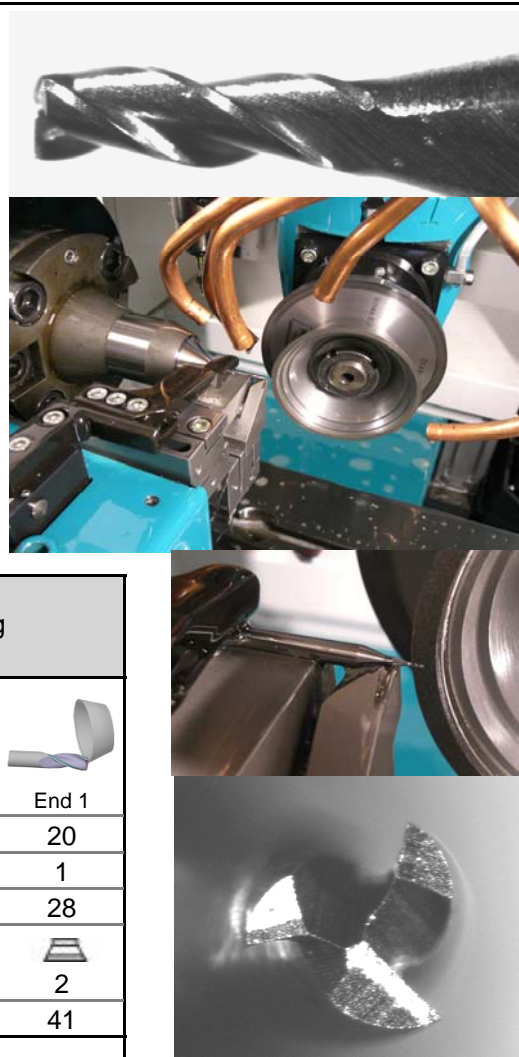













## Endmill Ø0.4 Z3

### A1-011-micro

Microtools can easily be ground with the appropriate setup for clamping - double support and floating clamp on shank - and the appropriate set of wheels. As long as the tool is held concentric within its V-Holder and the wheels keep their corner geometry, large batches of standard endmills can be manufactured (up to 300 pieces per palette). The polyvalent adjustability of the double support - linear and rotational adjustment - allows a perfect alignment of the V-Holder with respect to the shank axis. The W20 clamping finally has the functionality of a driving dog and to keep the x-position.



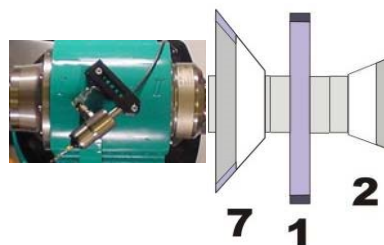
### 1. Cycletime for Production

Tool specifications						
Diameter 0.4 mm, Z 3, Length of cutting edge 1.8 mm, Helix angle 30 deg						
Material HM						
Operations						
Feed [mm/Min]	2000	150	20	150	20	20
Power [kW]		4	2	1	1	1
Cutting feed [m/s]		28	28	28	28	28
Used wheels						
Grinding time [s]	16	24	51	19	41	41
Total cycle time	3 Min 11					

The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

### 2. Used Grinding Wheels

1 Ø100 1A1 D25  
7 Ø100 12V9 D25  
2 Ø75 11V9 D25



### 3. Machine and Software Requirements

Machines: 5 axes CNC grinders : SIRIUS HPM, NORMA CFG  
Control: Fanuc 31i  
Coolant: Synthetic Oil, pressure 6 - 7 bar  
Software: Quinto 5

responsible engineer: OP, 12.2.07

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J. SCHNEEBERGER Maschinen AG 4914 Roggwil Switzerland  
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